

Max Lawton

Electrical Engineering student at CWRU



EXPERIENCE

CWRU Motorsports, Cleveland OH — *Embedded System Engr.*

SEPTEMBER 2025 - PRESENT

Designed, prototyped, and manufactured custom PCBs for vehicle subsystems using industry-standard schematic capture and layout tools.

Developed real-time firmware in C/C++ for custom embedded controllers operating under dynamic mechanical loads Implemented CAN/Cyphal communication between sensors, actuators, and control units to ensure reliable, low-latency data transfer

Collaborated with mechanical and systems teams to integrate our embedded hardware into a competition ready vehicle

CPYC Youth Sailing, Winthrop MA — *Fleet Maintenance*

MAY 2020 - PRESENT (Seasonal)

Maintained and repaired a fleet of 4 powerboats and ~24 sailboats, performing diagnostics and maintenance.

Rebuilt fuel injection systems, reconstructed damaged lower unit and propeller assemblies, and replaced full push-pull steering systems

Advanced fiberglass hull repairs and structural fixes under time constraints

Consistently restored vessels to full operational status within 24 hours of issue reports

EDUCATION

Case Western Reserve University, Cleveland OH

AUGUST 2025 - PRESENT

Cambridge School of Weston, Weston MA

AUGUST 2021 - JUNE 2025

FRC Team 5347 Team Captain and Software Team Lead

PROJECTS

Semi-active Suspension Algorithm Interpreter

A C++ wrapper for a semi-active suspension control algorithm. The wrapper controlled suspension stiffness using Cyphal and ZMQ protocols, and designed for reliability and zero downtime suspension adjustments.

Electrostatic Thermonuclear Fusor— *Capstone Project*

Built an Inertial Electrostatic Confinement (IEC) fusion reactor for my high school capstone project, using high-voltage acceleration of hydrogen isotopes with industry-standard vacuum and power systems.

SKILLS

Programming: C++, Python, Java, MATLAB, Verilog, Assembly

Embedded Systems: PCB design, real-time firmware, sensor interfacing, hardware manufacturing

Communication Protocols: CAN, SPI, I²C, Cyphal, ZMQ

Data & ML: NumPy, Pandas, MATLAB; neural networks (CNNs, LLM applications)

Web Development: TypeScript, React, Node.js

Hardware: High-voltage systems, vacuum equipment (CF, KF/QF, ISO), electrical diagrams